

Getting Started with Energy Security and DEPPM92-1

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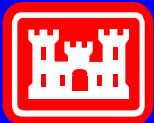
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Overview

- Vocabulary
- Components of a Plan
- Approaches
- Resources



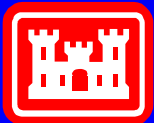
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What is Installation Energy Security?

Sustainment of essential utility flows to meet key mission requirements when and where needed.

- Safe
- Resilient
- Reliable

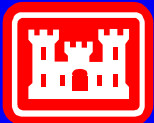


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Security Plan Methodology

- Vulnerability Analysis
- Emergency Response Plan
- Remedial Action Plan
- Implementation



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Vulnerability Analysis:

ID Mission Essential Utility Assets

- Essential *Tasks*
(e.g.: training, deployment, home base support, health and safety)
- Key Support Facilities
(e.g.: command, control, communications, information, water, sewage, medical care, force protection)
- Key Utility Components
(e.g.: electrical substation, chilled water for cooling computers, power for sewage lift station)
- Quantification and Prioritization of Loads



Reliability = %Uptime

Reliability	Down Time
90%	876 hrs/yr = 5.2 wks/yr
99%	88 hr/yr = 3.6 days/yr
99.5%	44 hrs/yr = 1.8 days/yr
99.9%	8.8 hrs/yr
99.95% (US electrical grid)	4.4 hrs/yr
99.99%	52.6 min/yr
99.999%	5.3 min/yr

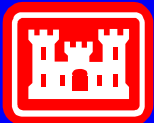


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Vulnerability Analysis: ID Potential Threat Scenarios

- Human Actions
 - E.g.: Terrorism/ Sabotage, Labor Strike, Error, Political Embargo, Cyber Attack
- Natural Occurrences
 - E.g.: Flood, Tornado, Ice Storm, Extreme Heat
- Technology Disturbance
 - E.g.: Mechanical or Electrical Failure



Vulnerability Analysis:

ID Vulnerabilities

- Dependencies with unacceptable consequences



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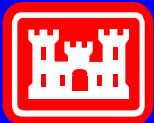
Vulnerability Analysis: Consequence/Threat Mitigation

- Consequence Mitigation:
 - Manual Tasking
 - Movement or Consolidation of Activities
 - Alternate Fueling/ Fuel Storage
 - Ready Stocks
 - Redundant Generation/ Networked Generation/
Triage Load Shedding
 - Multiple Providers of Energy Resources and
Equipment



Vulnerability Analysis: Consequence/Threat Mitigation

- Threat Mitigation
 - Physical Barriers
 - Access Control
 - Monitoring/ Detection Systems
 - Personnel /Visitor Background Checks
 - Intelligence Data

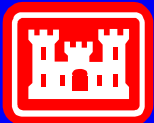


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Vulnerability Analysis: Risk Assessment

- A combination of threats on dependencies with consequences yield security risks.
- Unacceptable risk must be remedied.

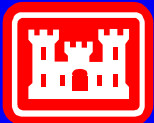


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Consequence Mitigation Through Distributed Generation

- DG's Many Benefits:
 - is near point of use,
 - inside installation perimeter,
 - eliminates vulnerability of aging transmission infrastructure,
 - increases reliability and power quality,
 - can allow for fuel diversity, energy independence and reduced emissions.



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CERL's Distributed Generation Integration Tool - DiGIT

- Technologies Assessed: Reciprocating Engines, Fuel Cells, Microturbines, Solar, Wind, Biomass
- Impacts Assessed: Energy, Cost, Emissions
- Implementation Trade Off Matrix
 - Security
 - Cost
 - Environmental Impact
 - Ease of Implementation
 - Acceptability/ Appeal



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Emergency Response Plan

- Data Base of People and Equipment
- Definition of Roles and Responsibilities
- Procedures and Sequences of Actions
- Contingency Stock

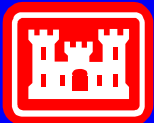


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Remedial Action Plan

- Necessary Actions and Rationale
- Contacts
- Cost/Benefit
- Schedule
- Milestones

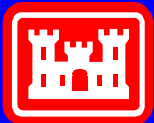


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Energy Security Plan Implementation

- Energy Security Planning Board
- Current Database
- Training
- Testing
- Annual Revision



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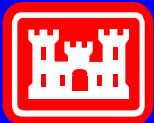
Energy Security Plan Methodology

- Vulnerability Analysis:
Mission Essential Utility Assets, Threats, Vulnerabilities, Consequence/Threat Mitigation, >>Risk
- Emergency Response Plan:
Data Base of People and Equipment, Definition of Roles and Responsibilities, Procedures, Contingency Stock
- Remedial Action Plan:
Necessary Actions, Contacts, Cost/Benefit, Schedule, Milestones
- Implementation:
Energy Security Planning Board, Training, Testing, Revision



References

- DEPPM 92-1 Department of Defense Energy Security Policy, 14Jan92
- DODI 5160.54, Critical Asset Assurance Program (CAPP), 20Jan98
- Joint Antiterrorism Program Managers Guide (JAT Guide)
- AR420-49, Facilities Engineering Utility Services
- AR190-16, Physical Security, 31May91
- AR11-27, Energy Contingency Plans

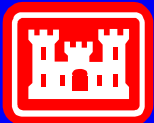


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Resources

- DEPPM-92.1 Checklist
- Energy Security Plan Template
at SERO IMA website: <http://www.pnl.gov/ima-seroenergy/reports/securityplans.stm>
- Oak Ridge National Lab: www.ornl.gov
- Energy and Infrastructure Assurance Program – Sandia National Lab: www.sandia.gov
- Risk Assessment Methodology for Water – RAM-W – SNL
- COE Power Reliability Reliability Enhancement Program (PREP), 249th Battalion (Prime Power):
www.usace.army.mil



Resources (con't)

- Defense Threat Reduction Agency (DTRA) – vulnerability assessments: www.dtra.mil
- DoD Assessment Office, Naval Surface Warfare Center (NSWC) Dahlgren Division – security audits: www.nswc.navy.mil
- Infrastructure Assurance Outreach Program –PNNL: www.pnl.gov
- Dynamic Utility Modeling (Ft. Future Utility Analysis Tools) - CERL: www.cecer.army.mil
- Distributed Generation Integration Tool – CERL
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